

R.V. FRANKLIN

NATIONAL FACILITY OCEANOGRAPHIC RESEARCH VESSEL *RV FRANKLIN*

RESEARCH SUMMARY

CRUISE FR 6/89

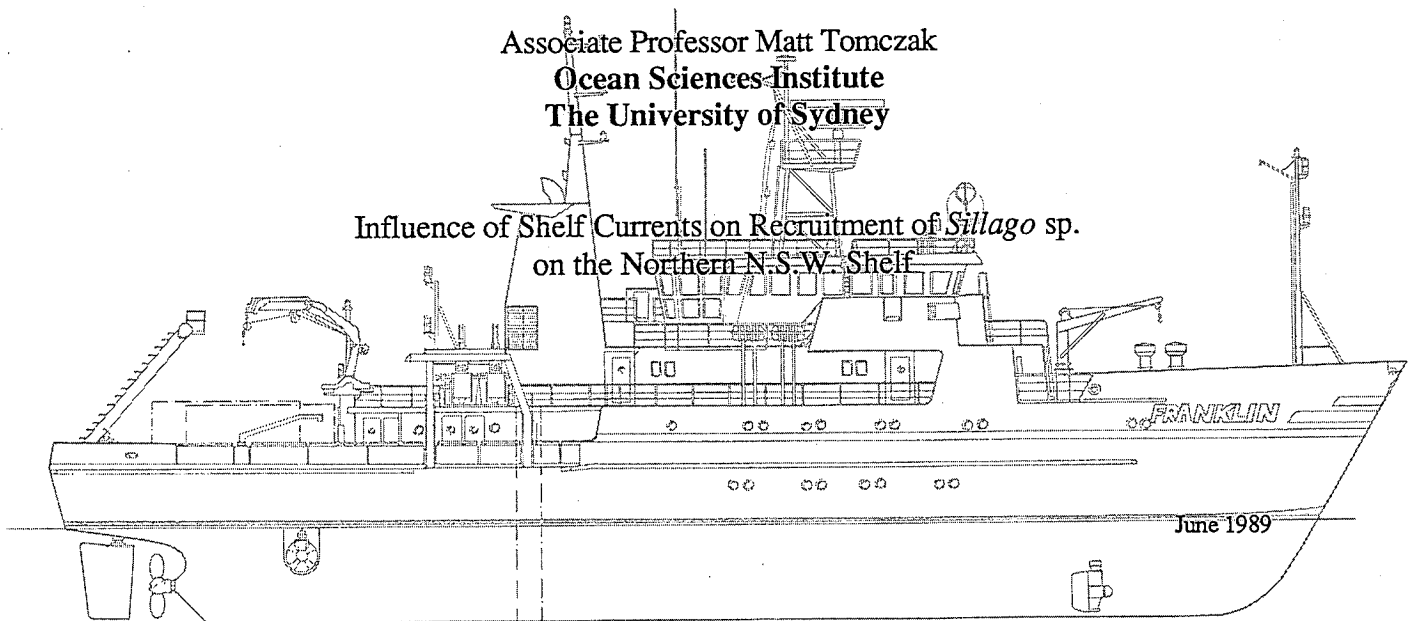
Sailed Coff's Harbour 1100 Thursday 11 May 1989
Arrived Sydney 0900 Monday 15 May 1989

Principal Investigators

Dr Pat Dixon
Centre for Marine Studies
University of N.S.W.

Associate Professor Matt Tomczak
Ocean Sciences Institute
The University of Sydney

Influence of Shelf Currents on Recruitment of *Sillago* sp.
on the Northern N.S.W. Shelf



June 1989

For further information contact

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R.V. FRANKLIN IS OWNED AND OPERATED BY CSIRO

RV FRANKLIN
RESEARCH CRUISE FR06/89

Cruise Summary

Itinerary

Departed: Coffs Harbour 1100 hrs Thursday 11 May 1989
Arrived: Sydney 0900 hrs Monday 15 May 1989

Scientific Program

* to collect samples of whiting larvae (plankton) on the continental shelf off northern New South Wales. These samples are to be used for genetic analysis.

* to study the distribution of whiting and other fish larvae on the shelf in the same region and to examine these distributions in relation to the oceanographic data.

* to study the effect of the East Australian Current on the water masses on the continental shelf in the same region.

Principal Investigators

Matthias Tomczak, Ocean Sciences Institute, the University of Sydney, NSW 2066.

Patricia Dixon, Centre for Marine Science, the University of New South Wales, P.O. Box 1, Kensington NSW 2033

RESULTS

All projected work was completed, due to good weather conditions throughout the cruise. Four CTD sections across the continental shelf and the inner continental slope were occupied at about 29° 36'S, 30° 30'S, 31° 27'S, and 32° 27'S. Occasional CTD stations were taken on the shelf between the sections, the total number of stations being 36.

Fifteen minute plankton tows were made at stations as approximately indicated in Figure 2. A total of 52 samples were collected with an 80cm diameter ring net of mesh size 0.5mm. Between stations the samples were quickly examined and any whiting larvae present were removed, placed into a cryogenic tube and then into liquid nitrogen for preservation and transportation to the University. Genetic comparisons will be made between these larvae. The remainder of each sample was preserved in formalin and will be examined in detail at a later date.

Hydrographic conditions proved very unusual for the time of year. Inshore water temperatures and salinities at the surface were abnormally low as a result of massive freshwater supply from rivers. Offshore temperatures were extremely high mostly above 24°C compared to a long-term average of 21-22°C for May. This was a result of particularly strong advection of Coral Sea water with the East Australian Current which flowed at about 3 knots and was quite close to the shelf, as can be seen from temperature sections (Fig.1). The Hydrographic observations should give valuable information on the effect of an anti-El niño on oceanographic conditions in the Tasman Sea.

Preliminary sorting of the plankton samples indicated that the whiting larvae were patchy in their distribution. They were found in ten of the samples from four generalised areas as indicated in Figure 2. The largest numbers of larvae were found further south and further from the coast than expected. This may be related to the unusual oceanographic conditions that prevailed during the cruise. We captured less whiting larvae than we had hoped for but our laboratory work on these larvae will still continue. Further sorting and analysis of the formalised samples will yield distribution patterns for all of the species captured.

PERSONNEL

Matthias Tomczak	University of Sydney	
John Luick	University of Sydney	
Kate Warmmus	University of Sydney	
Cesar Villanoy	University of Sydney	
Patricia Dixon	University of NSW	
Anthony Misciewicz	University of NSW	
Neil Sims	University of NSW	
Andrew Forbes	CSIRO - ORV	Cruise Manager
Dave Edwards	CSIRO - ORV	
Jeff Dunn	CSIRO - ORV	
Bob Griffiths	CSIRO - ORV	

FIGURE 1

Temperature on the three northern sections across the shelf.

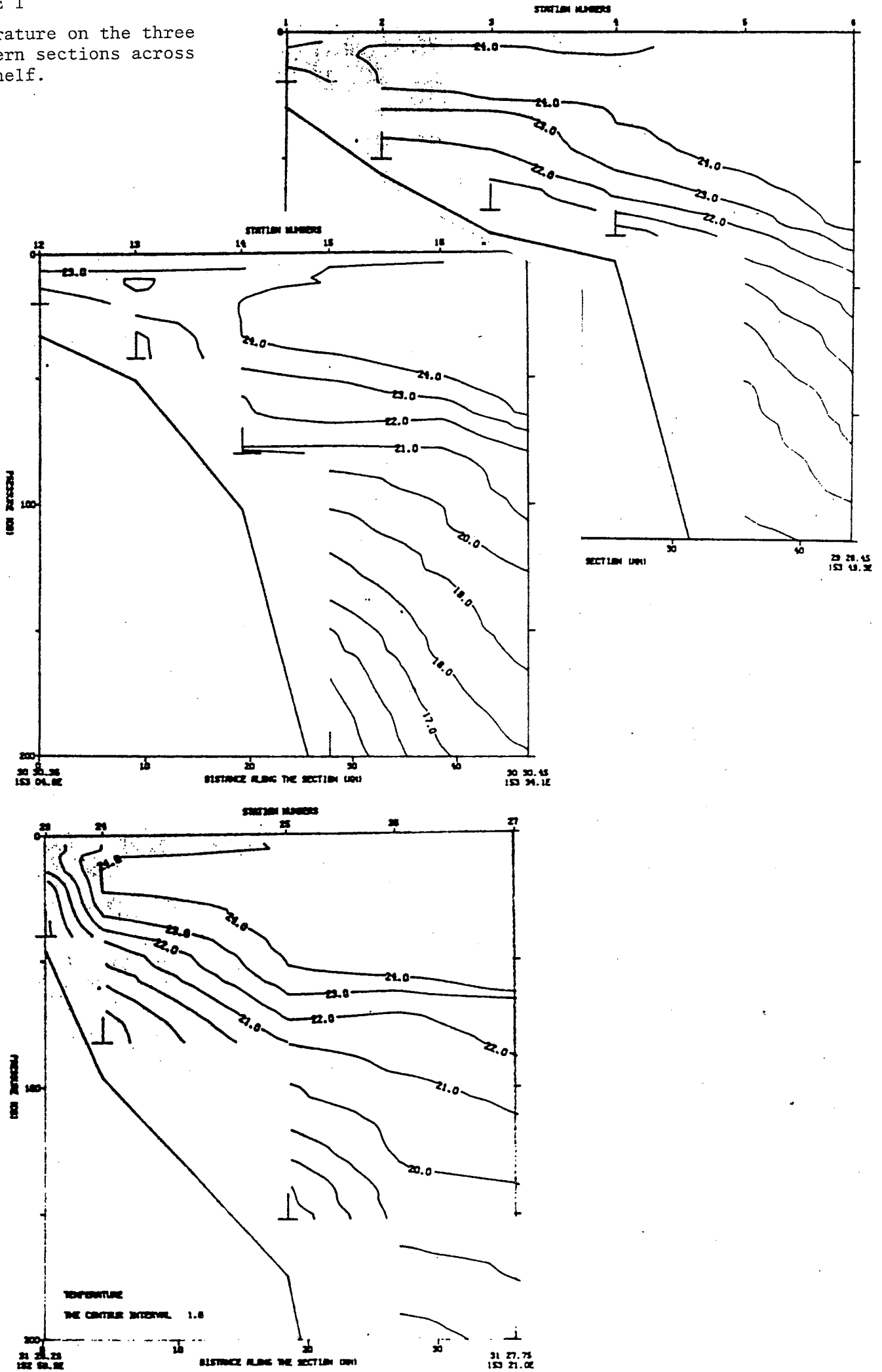


Figure 2
 Diagram to indicate the approximate
 location of sampling stations ●
 and distribution of whiting
 larvae ◐

